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Selection and Cataloging for an Automated Retrieval Collection: Viewpoint of a Cataloger

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In the summer of 2004, Georgia Southern University began a library construction project that was to last four years. An important aspect was the installation of an Automated Retrieval System (ARC) to house a substantial portion of the library collections so that more space could be available for students, faculty, and the services to meet their needs. This paper traces the development of the use of the ARC to house collections with emphasis on how materials were selected for the two phases of the project and how catalogers have adapted to the idea of collections that can only be browsed virtually.

Selection and Cataloging for an Automated Retrieval Collection

Viewpoint of a Cataloger

Introduction

As is the case for several libraries currently utilizing an automated retrieval system, the librarians and administrators at Georgia Southern University decided that such a system would be included as part of a large renovation and construction project, begun in summer of 2004, intended to enlarge and improve the library facility and services of the Zach L. Henderson Library. Like many other academic libraries, we had begun to feel that our print collections were occupying too much space compared to the space available for library users. In addition, our enrollment had been growing at a phenomenal rate for a number of years, and we literally did not have adequate seating in our pre-renovation facility. We wanted to greatly increase our capacity for library users and incorporate appropriate facilities for today's library user while retaining most of our collections, something that an automated retrieval system would make possible.

At Georgia Southern, we decided to call our automated retrieval system the ARC or, Automated Retrieval Collection, rather than an ARS for Automated Retrieval System. This decision was largely based on our desire to have library staff and library users alike view the materials in the ARC as part of an active collection rather than as storage, not simply avoidance of an unfortunate acronym. We also used a lot of nautical themes as we kept everyone up to date on the progress of our construction and move, and the acronym ARC played well in this effort. We were loading the ARC, launching ARC, or boarding the ARC.

The automated retrieval system is housed in the Access Services area of the library, through a door behind the circulation desk. It is a thing of fascination for visitors to the library or anyone seeing it for the first time. The ARC is composed of two aisles that are three stories

high. Each aisle has two rows of large metal bins housed on a large metal rack to hold books and other items. Each aisle has a robotic crane that moves up and down the aisle to bring bins to the work area for books to be taken from or added to the bin. The retrieval of materials from the bins and the adding of materials to the bins are all done manually; no robot can do this part. The robotic crane also returns the bin to its storage place on the metal rack to wait until it is needed again. All of this is controlled by computers, specifically our Voyager integrated library system which communicates with the ARC system, using the item barcode to indicate what items to retrieve or store, much like an industrial inventory system.

The automated retrieval system seemed to be a good move in terms of economics, with some basic number crunching showing that purchasing the ARC system for shelving much of our collections would be vastly less expensive than the additional floor space and traditional shelving that would have been required to house the same materials. The ability to retain collections and keep them within the library building rather than miles away in a remote facility was also an inviting feature since we had already dealt with having all of our 1970 and earlier bound periodicals housed remotely with several courier runs per day to retrieve materials requested from this offsite location. The greatest advantage of all in purchasing the ARC system was to create much more space for our students and faculty involved in a myriad of activities in the library, ranging from learning commons space to individual and group study rooms, a coffee shop, classrooms, a presentation rehearsal area, as well as lots and lots of computers, not only in the learning commons area but spread throughout the library.

Two Phases of Construction and ARC Use

At first glance, deciding what to place in the ARC and how to catalog materials for the ARC collection might seem simple. We could just put in the older materials that nobody uses but that we have some reason for wanting to retain. As for cataloging, all materials should

already be fully cataloged, right? This is not as simple as it sounds for reasons that I will explain further in this article, and our situation was decidedly complex because were facing an interim move situation that would require us to use the ARC differently in the initial stages than we anticipated using it in the long haul. Our renovation and construction project spanned four years during all of which the Collection and Resource Services Department (Technical Services) was housed outside the library in a building across campus.

What made the decision about what to place in the ARC so complicated was that fact that the construction and renovation project was divided into two distinct phases, clearly limiting our decisions about materials in terms of what should go into the ARC, what should remain in the very limited open stacks, and what should go into the warehouse. During the first phase, a new wing was added to the existing building. During the last 60 days of construction of the new wing, we were allowed to load materials into the ARC, wearing hardhats and tiptoeing through a walkway created for us made of strips of plywood.

Upon completion of the new wing, the entire original library building had to be evacuated for a renovation. The fact that the new wing of the library was smaller than the original library was the driving force behind a lot of our decisions. The renovation and expansion project required our library to function for two years in a much smaller space than the original library had contained, as the library functioned in the new wing, and the "old" library was completely gutted for renovation. It was during this time that our department was glad to be housed across campus.

After much discussion, number crunching, and decision-making, we came up with a plan to place the most frequently used materials in open stacks during the interim two years in small library space, with materials in the second tier of use being placed in the ARC collection. The majority of our materials went to a warehouse facility (a vacant grocery store) with regular

courier runs being made between the warehouse, library, and two library departments housed in facilities outside of the library. This seemed the logical decision even though it would eventually mean taking many of the materials out of the automated retrieval system and re-locating them to open stacks and placing many of the materials temporarily housed in the warehouse into either the ARC collection or back into open stacks.

The Initial ARC Load

After deciding that materials in the second highest use category were to be placed in the ARC, we still had to make a lot of decisions for the interim as well as for the long term. For our initial load, which placed us under considerable time constraints, we decided that we would have no choice but to load materials that were relatively simple to load. We had lots of statistics prepared for us by our Systems Librarian, so we knew what had circulated and how often by LC category, publication date, and within the last ten years. We decided that the materials best suited to be loaded in our 60-day window would be single volume monographs and older runs of periodicals. We were not able to fill the ARC or place everything there that we could have, because of our time frame to load the ARC. We attempted to create a balance between highest use monographs and most current periodicals in the open stacks, second highest use monographs and older periodicals in the ARC, and lowest use materials, along with sets of materials of any kind being placed in the warehouse. In addition, government documents were housed in a separate site outside of the library. The reference collection was split so that the less used volumes were in the warehouse, and the frequently used materials were in open reference stacks. For the initial load, many of these decisions were based on what was easy to load, and what we needed to have on hand in the temporarily downsized library as opposed to what we would have to retrieve from offsite.

The actual load was a huge project involving almost everyone who worked in the library. We had already gone through a project of "dotting" our books on the spine labels, as well as "arc marking" them, meaning that the last three digits of the barcode label were written on the top of the book pages. All books with black dots went to open stacks. Black dots represented either recent copyright dates or high circulation statistics. Books with red dots went to the ARC, and books with no dots were destined for the warehouse. Books with red dots were those that had circulation in the second highest category, while books with no dots were older books with low circulation statistics for the last ten years.

Books with red dots were pulled and moved to a staging area where templates were used to sort them by size to match the five different bin sizes of the ARC. In the automated storage system, materials are stored by size (mostly height) rather than by call number. The order is completely random, and all of our monographs meeting the criteria for the ARC, from the circulating collection are stored in this manner. Carts were then lined up by size, ready for ARC loading. Crews of five people, four loaders and one supervisor were scheduled for two hour blocks of time every day for the loading period. There were few periods when there was not a full loading crew working. Most people seemed to kind of enjoy the change in routine as well as the fact that we were all working toward getting the new library completed.

While the monographs were loaded into random bins, we decided early on to load periodicals, audiovisual materials, and microfilm, in dedicated bins. After using the ARC for only a very short time, we realized that the more alike in size the materials are within a single bin, the better the system works as far as loading and unloading. Therefore, mixing large heavy periodicals in with smaller monographic volumes was going to create problems. Our periodicals, therefore, always go back into the same bin. Our monographs do not go back into the same bin each time, but are stored randomly into the next bin in the queue with space

available. This kind of random storage could be problematic if you called up a random bin to store a really thick periodical in a bin of monographs, only to find that there was not room. There is always a saved space in a dedicated bin. This makes storing them back potentially slower because they must go back into the bin from which they came, but that is much less trouble than dealing with a bin that does not have enough space remaining. Even though we made this decision without any real advice and only the loading experience with monographs behind us, it was a good one.

Cataloging Considerations for ARC Collections

If all library materials were fully cataloged and analyzed, there would not be much to say about cataloging materials housed located in an automated retrieval collection as opposed to cataloging materials housed in an open and browsable location. Complete and accurate bibliographic records are essential in order that the materials in an ARC system become a collection as opposed to storage. Materials that are not bibliographically accessible become nearly as lost as those that are literally gone from the collection.

The truth of the matter is that cataloging has changed over time, and most libraries do not have all materials cataloged equally well. We used to rely heavily on print indexes to tell us what was in a poetry or short story anthology. These indexes are still available of course, but now our users are more likely to see the contents of newer books listed in the catalog, coming from the MARC 505 field or a link to a publisher site on the web, coming from the MARC 856 field, showing the table of contents. Or they might prefer to look at Amazon or Google Books to get this kind of information.

In the past, fiction titles often were not given subject access to the extent that they are currently, and genre headings are a recent addition to cataloging records. All of these features of newer catalog records make the more recent materials actually more suitable for virtual online

browsing than older ones, but of course it is the older materials that need to be in the ARC Collection. Summaries are more often included now for library materials than in the past in the MARC 520 field. These examples are not a reflection on past catalogers, just a few representations of change over time. In the past, books were always available to review, and the cards in the catalog were just too small to put additional information on them. Of course, students have only to request a book, and it will be available for them to review at the circulation desk in less time than it would take them to go and find it in the stacks.

Although books and other library materials are not stored in call number order in the ARC Collection, but rather in random order, classification numbers remain important. With our Voyager system, the "classic catalog version" makes a virtual shelf browse possible. A person can click on any call number in the catalog and browse to see what would be shelved next to an item in either direction, thus collocating all materials within a particular call number range. The virtual shelf browse has one advantage over the physical browse in that all the collections are integrated, meaning that what is in the ARC, what is in Reference, what is in Stacks, and all other collections appears in one call number arranged listing.

Unfortunately, the new catalog search interface that we are beta-testing does not have this feature. Probably it can be added in the future, and as far as I am concerned this is a deal breaker with or without an automated storage retrieval system. Of course, the newer catalog interfaces that many libraries are using now have other features to enhance virtual browsing, including pictures of book covers, links to Google Books and WorldCat, and faceted searching. These new interfaces are only going to get better and make the ARC Collection even more visible.

As soon as we learned about the ARC system and its implications for our library and its collections, the catalogers began thinking about what we could and should do in order to improve access to materials placed in the ARC. First, we decided that we should catalog everything as if

it might be in the ARC one day. We began subscribing to the OCLC record notification service so that we get listings of our holdings that have had MARC 505 files (contents) notes added among other changes. This service allows us to easily update older records which have been improved in the OCLC database. We are much more conscious of analyzing multi-volume monographic sets if they go into the ARC. As a general rule, I suggest caution about adding a multi-volume set to the ARC collection, especially if it is the kind of set that a user is likely to want to browse multiple volumes or use a common index. Sets that we add are scrutinized to make sure that the information will not be hidden, which often means analyzing individual titles.

Item enhancement is another important consideration for periodicals, serials, and any sets of materials in the ARC collection. When a library staff member or library users goes to request an individual volume of a title with multiple volumes, they need to be able to identify which volume that they need. We had to have a massive bar-coding and item creation project for our periodicals in the two years before our building project began because, although our periodicals were cataloged, we only had summary holdings with no individual items records for each volume. In some cases, the volume needs enhancement as well, when a volume number and year might not be enough to indicate which volume is needed. This is especially true when there are supplements or special issues, and almost always in the case of sets of law books.

A basic bibliographic and holdings record is a must for the ARC system since the library catalog software and the ARC software communicate and keep track of what is happening to a particular book by means of the item barcode. If this of data is not available, the ARC has no way to keep track of the location, circulation, or return of library materials. Library staff and library users alike must use the catalog since it is the interface to the ARC Collection. The catalog is the only way to know what is in the collection, and it is the way that users make

requests from the collection, although library staff can go directly to the ARC system and type in a barcode to retrieve an item.

Problem Collections for the ARC

In reality, most libraries have hidden materials and collections, as well as materials that are not as well represented in the library catalog as other materials. The irony is that these hidden collections, as well as collections that are not fully cataloged or represented in the library catalog, are often the first materials that seem to be likely candidates for the ARC collection. This reasoning is based on an assumption that the materials have low use because there are no circulation statistics for them or because in reality they are low use. This becomes a real "chicken or the egg" conundrum since these materials are often not appropriate for circulation and because many of them are not even included in the integrated library system for library catalog display, for circulation, and for the maintaining of statistics for use.

Examples of collections that are both troublesome and under-represented in the library catalog include microfilm collections of periodicals from the 1700-1800s such as the English Literary Periodicals series and the American Periodical series. These are troublesome because one reel can contain many titles, meaning multiple bibliographic records for the same physical piece. Microfilm newspapers are a similar category. These do not circulate out of the building except in the case of interlibrary loan. The older newspapers probably are not high use items, but when someone is doing in-depth historical research, the researcher might want to look at years and years of old newspapers. Fortunately, some titles are available to us in the online format, which is a far more preferable format than microfilm for such resources. Some retrospective newspapers are accessible to us online while others remain prohibitively expensive thus far. In other words, we will be using our microfilm collections for the foreseeable future because, although not the highest use items, they are essential for research and funding is not

available to convert these resources to online versions even where such online versions are available for purchase. Nobody wants to pull five years worth of microfilm newspapers out of the ARC at one time for a researcher to scan.

Another category that is consistently recommended for the ARC Collection but is not always the best candidate is government documents. Many libraries do not have these materials fully cataloged, especially the older titles. We have been working diligently to get our documents collection cataloged since January of 2003, but we still have a long way to go, meaning that there is no bibliographic record and barcode to link some of the best candidates from the documents collection to the ARC system. If indeed a library is working to get them cataloged, placing them in the ARC Collection would make cataloging them much more difficult for the catalogers.

Format is another consideration for documents. Government documents do not make a very pretty collection in the stacks due to the variety of formats and sizes of the documents. Typically, many documents are in the form of brochures and single sheets of paper, thin newsletters and periodicals which are not bound, as well as flaky old fragile leather bound materials. There are a lot of materials in the traditional book format, but that is not what we usually notice first. There is also the perception that all of these materials are all online. The answer to that is pretty much the same as the rest of the collection in that many new materials are issued online only or in both a physical format and an online format. However, the legacy or retrospective collection that we see on the shelf is in large part not available online, at least not at the present time. Packaging issues have to be considered as well. Many government documents are periodicals which could be good candidates for the ARC; however, most of our documents periodicals were not bound, and loose issues do not work well if you expect to retrieve them very often from the ARC.

Another aspect of government documents that made them an unlikely candidate for wholesale placement in the ARC Collection for our library was the fact that we needed a zero-based collection review of both our selections and retention of current holdings. Imagine how difficult it would be to review, weed, and catalog a collection that was truly invisible, being housed in the ARC. Volumes to be reviewed, weeded or cataloged would have to be retrieved individually from the ARC Collection by barcode for this process.

Permanently Selecting Materials for the ARC Collection

Our library survived the initial phase of using the ARC for housing materials categorized by second highest use category. During 2008, the last year of the library renovation, we began adding many older titles to the ARC, particularly print indexes and older reference texts, which are considered low use and had been stored in the warehouse for the last four years. We also added quite a few government documents that were in book format and that we had had time to make bibliographically accessible through the catalog.

Needless to say, our Access Services Department is anxious for us to make the switch and begin to use the ARC only for low use materials, since the ARC has added a whole new dimension to their workload as well as to that of Collection and Resource Services. We are learning that loading the ARC initially was somewhat simpler than unloading and replacing or switching collections. Fortunately, we have plenty of space left in the ARC, so these processes can take place simultaneously.

As for moving the higher use materials out of the ARC, we began with a low key approach that continues to work very well. We have designated a shelf in the Access Services area as a "Collection & Resource Services Review Shelf" so that materials that have been requested from the ARC are not automatically returned to the ARC as they were before the completion of the building. Instead, materials from the ARC collection that are used by faculty

or students are reviewed by Collection and Resource Services staff as candidates for the open stacks. At present, an average of approximately 40 to 50 books per day are removed from the ARC and added to the open stacks. This may not sound like many, but amounts to more than shelf of books per day.

Our decision criteria as to whether to place a volume back in the ARC or return it to the open stacks is fairly simple. We already know that it is in the middle tier as far as circulation history, so in general unless it is in poor condition, fragile, obviously out of date, or has some other compelling reason to be returned to the ARC, we send it to open stacks. No literature, philosophy, or history books are returned to the ARC request of the faculty of those departments unless there duplicate copies; and no books with a copyright later than 2000 are returned to the ARC unless a newer edition has already been acquired.

As for adding more of our little used materials to the ARC, we began yet another project before the dust had settled on our move and everyone was all in one place again in the complete library in the fall of 2008. Again, Access Services and Collection and Resource Services teamed up to create a circular process of 1) pull older books from stacks 2) shift collections where older books were removed 3) systematically pull all books with 2000+ copyright dates from the ARC and shelve them in stacks 4) store older books pulled from the stacks in the ARC in the place of the new books pulled out of the ARC. Information Services Librarians and our Collection Development Librarian cooperated in pulling older books from the stacks for re-location to the ARC.

In summary, any library materials can be stored in the ARC as long as they have a bar code and a record in the catalog to connect with the ARC system. Some materials are easier to load and retrieve on a regular basis which is a big consideration when thinking about staffing and workflow. Other considerations are how suitable the materials are in terms of format or binding.

As mentioned, a bin full of single sheets of paper or individual flyers would not work very well. These materials would need to be packaged in some manner. Another consideration is whether the materials are really part of an active collection or whether they are just being stored. If they are just being stored for some reason, as long as the group of materials is identified with a barcode, this can work also. As mentioned earlier, we wanted our ARC to house an active collection and have found what works for us. Each library installing such a system would need to carefully analyze their collections, staffing, use patterns, and purpose for the ARC system in order to decide what would work best at an individual institution.

Collections Committee

Since the automated retrieval system is something new for Henderson Library, there were questions about who does what regarding responsibilities related to the ARC. If you think of the ARC as analogous to shelving, most of these questions work themselves out; although some of the problems arising from the ARC are a lot more complicated that shelving problems. Early on in the moving planning process, we established groups to handle different aspects of the move. One of these committees dealt with collections, and it was this group that did most of the planning for the initial ARC loads. The long-term effect of this group has been beneficial in that this group still meets on an as needed basis. It is made of librarians and staff from Collection & Resource Services, Access Services, and Systems.

At the present time, the Collections Committee meets to discuss catalog displays, to make decisions about materials that should go into or come out of the ARC, to clear up questions about material locations, to plan shifting and pulling of older materials for ARC loads, and just about any issue related to collections. After the move, there were many location changes and displays in the catalog that had to be changed or re-worked. Almost none of the prior locations were the same. We have reached consensus about books that do not work as well for the ARC, based also

on faculty input. These include all of the art and literature collections as well as most history and some other humanities fields. Logically, disciplines that tend to be more book-oriented tend to want the books for their discipline in open stacks. Art books are a logical choice as well. No amount of cataloging could make up for the ability to browse a book of paintings or photographs.

The Collections Committee has become a self-motivated team of people who have continued to function in this capacity long after it was officially required. These meetings prevent misunderstandings and confusion about roles and responsibilities. Whenever a problem or question arises that crosses department boundaries, we schedule a meeting, and make the best decision that we can for all concerned.

What's next for the Collections Committee and the ARC Collection? As soon as we finish pulling all books with a copyright date of 2000 or later, we will probably begin an audit of the random bins in the ARC system. It is easy to lose a book in the ARC if a person becomes distracted. The scanning of the barcode and placing the book in the correct bin is all that is required, but is possible to make a mistake, and the software does not have many user-friendly safeguards to prevent this from happening. With our rapid load, and the amount of moving books in the out of the ARC, there are bound to be errors, although Access Services reports that they have very few cases where a book has not been where the system said that it would be. However, we will combine this with a look at whatever else we might want to remove from the bins for open stacks and replace with older materials.

Advantages of the ARC Collection

In conclusion, I believe that the ARC Collection has many advantages. I would, however, recommend doing one thing that we did not do. I think that someone on staff should be designated as the ARC manager from the beginning. By this, I mean a staff person who is capable, dedicated and willing to leaning all the ins and outs of problem solving with the ARC

system. I do not believe that it is a good idea to have multiple people handling the problem issues that arise. There is a danger of too many interpretations of what an error message means and different ways of handling it. We developed local instructions which helped, but if you don't handle the problems every day, you forget what to do and have to learn all over again. The problems that I am speaking of here are of the human error type which can be fixed by an individual or through the audit process. Mechanically, the system has proven very reliable with few maintenance issues or down times.

As a way to increase storage and seating and room for innovative services at the same time, I think the ARC is an excellent solution. Automated storage retrieval is far superior to having offsite storage, and the system. In a small space, you can store a very large collection, and have it accessible within minutes.

There is little doubt that the ARC system is economical. We do not have the cost of a courier or vehicle maintenance or staffing for pickup and delivery for offsite storage. In addition, in our building program, we could never have gotten the equivalent building space to house an equal amount of traditional shelving. Our options, other than the ARC, would probably have been to weed more than we wanted to and then to permanently use offsite storage. It is reassuring to know that we have space to add another aisle if we need it, so we have growth room for many years for collections. Currently, we are trying to find and maintain that right balance between what we keep in open stacks and what we keep in the ARC collection. In fact, that is one of our strategic goals for the next two years.

Another advantage of the ARC is that libraries can keep materials that they really do not want to discard at the present time. Because of the pace at which we were making decisions, we could not really analyze and make good collection development decisions in all cases. We did weed a lot of materials, but we also put a lot of indexes and other such resources in the ARC

because we were not ready to make those decisions. The ARC gave us the freedom to keep whatever we wanted to keep until we get ready to evaluate the collection in those areas. Of course, there is an implicit danger here, that some libraries might never weed, but fill the ARC with materials that should be withdrawn from the collection. Also, the ARC can be used to store more that library resources. Library departments have been assigned designated bins to store supplies or any kinds of items for which such space is needed. These of course do not show up in the catalog, but are retrieved by barcode just the same.

As a climate controlled environment, the ARC also has an advantage. It is excellent for storing Special Collections materials or any other fragile items. The temperature is more closely controlled than throughout a large facility, and the bins are a better storage solution that shelving for many materials.

How well do our users like the ARC? My comments are strictly anecdotal. One advantage for users is that they can request materials from within the library or remotely. So, a student can make a request from his or her apartment or a faculty member from his or her office. Distance education students also are able to make requests remotely through the catalog interface. I believe that students rather like it. Some faculty do not like the idea of books not being available for browsing, and generally they are from fields that have a good reason to feel that way. For the student who can find materials in the catalog, but cannot quite make the connection of how to go from that catalog record to the shelf and get that actual book, the ARC must seem ideal. No more wandering around the stacks looking for a strange number that does not make any sense. They can just request the book from the computer screen and go pick it up at the desk.

Personally, I would prefer not to work in a library where all the books were housed in an ARC collection for I love to browse for books that I am interested in and want to read. However,

I remember a time as an undergraduate when a history professor sent me to the library get a certain title, and I found it in the catalog without a hitch. However, I never could find it in the stacks. How was I to know that the library was still transitioning from the Dewey to the Library of Congress Classification system, and that a small collection, including the book that I needed, was still in Dewey? I really would have appreciated ARC collection then.